

**WHAT IS CLAIMED IS:**

- [c1] 1. A voice over Internet (VOIP) system, comprising:  
 at least one infrastructure component communicating with one or more wireless devices using a wireless device over-the-air protocol different from Internet protocol (IP), the infrastructure component including:  
 at least one logic component facilitating communication between a target wireless device and a communication device, the target wireless device not supporting IP, the logic component undertaking method acts including:  
 transforming information in IP protocol to wireless device protocol;  
 sending the information in wireless device protocol to the target wireless device;  
 transforming information in wireless device protocol from the target wireless device to IP protocol; and  
 sending the information in IP protocol toward the communication device.
- [c2] 2. The system of Claim 1, wherein the wireless device protocol is a code division multiple access (CDMA) air interface protocol.
- [c3] 3. The system of Claim 1, wherein the infrastructure component is a base station (BTS).
- [c4] 4. The system of Claim 1, wherein the infrastructure component is a base station controller (BSC).
- [c5] 5. The system of Claim 1, wherein the wireless device protocol is an over-the-air (OTA) voice protocol.
- [c6] 6. The system of Claim 1, wherein the logic component converts OTA protocol packets to IP packets.
- [c7] 7. The system of Claim 1, wherein the logic component converts IP packets to

OTA protocol packets.

[c8] 8. The system of Claim 6, wherein the logic component converts IP packets to OTA protocol packets.

[c9] 9. The system of Claim 5, wherein the wireless device protocol is a spread spectrum protocol.

[c10] 10. The system of Claim 6, wherein an OTA protocol voice packet has a size less than the size of an IP packet.

[c11] 11. A method for communicating information in IP to a wireless device not supporting IP, comprising:  
transforming the information in IP to an over-the-air (OTA) protocol; and  
transmitting the information in OTA protocol to the wireless device.

[c12] 12. The method of Claim 11, further comprising:  
transforming information in OTA protocol from the wireless device to IP; and  
sending the information in IP toward a communication device.

[c13] 13. The method of Claim 12, further comprising associating the wireless device with an IP address based at least in part on a location of the wireless device.

[c14] 14. The method of Claim 13, wherein the method is undertaken by a communication system infrastructure component.

[c15] 15. The method of Claim 14, wherein the infrastructure component is a base station (BTS).

[c16] 16. The method of Claim 14, wherein the infrastructure component is a base station controller (BSC).

- [c17] 17. The method of Claim 11, wherein the OTA protocol is a CDMA protocol.
- [c18] 18. The method of Claim 12, comprising converting OTA protocol packets to IP packets.
- [c19] 19. The method of Claim 12, comprising converting IP packets to OTA protocol packets.
- [c20] 20. The method of Claim 11, wherein the OTA protocol is a CDMA voice protocol.
- [c21] 21. The method of Claim 11, wherein an OTA protocol voice packet has a size less than the size of an IP packet.
- [c22] 22. A computer program device, comprising:  
means for converting information in IP from a communication system infrastructure to information in over-the-air (OTA) protocol packets to render first converted packets;  
means for converting information in OTA protocol packets from a wireless device to IP packets to render second converted packets; and  
means for providing communication between the wireless device and the infrastructure using the first and second converted packets.
- [c23] 23. The device of Claim 22, wherein a first converted packet has a size smaller than a second converted packet.
- [c24] 24. The device of Claim 23, wherein a first converted packet has a size smaller than a header of a second converted packet.
- [c25] 25. The device of Claim 22, wherein the OTA protocol is a CDMA protocol.

[c26] 26. The device of Claim 22, wherein the logic means are executed by an infrastructure component.

[c27] 27. The device of Claim 26, wherein the component is a base station or a base station controller.

[c28] 28. The device of Claim 22, further comprising:  
means for associating the wireless device with an IP address based at least in part on a location of the wireless device.

[c29] 29. The device of Claim 22, wherein the OTA protocol is a CDMA protocol.

[c30] 30. A communication system, comprising:  
at least one wireless endpoint in the system;  
an infrastructure supporting IP, the infrastructure including a virtual IP endpoint communicating with the wireless endpoint, the virtual IP endpoint receiving information having an IP address allocated to the virtual IP endpoint and intended for receipt by the wireless endpoint, the virtual IP endpoint providing the information to the wireless endpoint.

[c31] 31. The system of Claim 30, wherein the virtual IP endpoint accesses at least one logic component undertaking method acts including:  
transforming information in IP protocol to wireless device protocol;  
sending the information in wireless device protocol to the wireless endpoint;  
transforming information in wireless device protocol from the wireless endpoint to IP protocol; and  
sending the information in IP protocol toward the communication device.

[c32] 32. The system of Claim 31, wherein the wireless device protocol is a code division multiple access (CDMA) protocol.

[c33] 33. The system of Claim 32, wherein the virtual IP endpoint is a base station

010299

(BTS).

[c34] 34. The system of Claim 32, wherein the wireless device protocol is an over-the-air (OTA) protocol.

[c35] 35. The system of Claim 32, wherein the logic component converts OTA protocol packets to IP packets.

[c36] 36. The system of Claim 32, wherein the logic component converts IP packets to OTA protocol packets.

[c37] 37. The system of Claim 33, wherein the logic component converts IP packets to OTA protocol packets.

[c38] 38. The system of Claim 35, wherein the wireless device protocol is a CDMA protocol.

[c39] 39. The system of Claim 1, wherein the infrastructure component is a gateway for a satellite communication system.

[c40] 40. The system of Claim 5, wherein the wireless device protocol is a protocol selected from the group of protocols consisting of: CDMA, WCDMA, TDMA, TD-SCDMA, UMTS.

[c41] 41. The method of Claim 14, wherein the infrastructure component is a gateway for a satellite communication system.

[c42] 42. The method of Claim 11, wherein the wireless device protocol is a protocol selected from the group of protocols consisting of: CDMA, WCDMA, TDMA, TD-SCDMA, UMTS.

[c43] 43. The system of Claim 1, wherein the information represents digitized voice, or digital data, or digitized image data.

[c44] 44. A voice over Internet (VOIP) system, comprising:  
at least one infrastructure component communicating with one or more wireless devices using a wireless device over-the-air protocol different from Internet protocol (IP);  
and  
at least one wireless communication device communicating with the infrastructure, the wireless communication device not supporting IP.

[c45] 45. The VOIP system of Claim 42, wherein the wireless device is a target wireless device, and the infrastructure component includes:  
at least one logic component facilitating communication between the target wireless device and another communication device, the target wireless device not supporting IP, the logic component undertaking method acts including:  
transforming information in IP protocol to wireless device protocol;  
sending the information in wireless device protocol to the target wireless device;  
transforming information in wireless device protocol from the target wireless device to IP protocol; and  
sending the information in IP protocol toward the other communication device.

[c46] 46. The system of Claim 43, wherein the wireless device protocol is a code division multiple access (CDMA) air interface protocol.

[c47] 47. The system of Claim 43, wherein the infrastructure component is a base station (BTS).

[c48] 48. The system of Claim 43, wherein the infrastructure component is a base station controller (BSC).

[c49] 49. The system of Claim 43, wherein the infrastructure component is a gateway

for a satellite communication system.

[c50] 50. The system of Claim 43, wherein the wireless device protocol is an over-the-air (OTA) voice protocol.

[c51] 51. The system of Claim 43, wherein the logic component converts OTA protocol packets to IP packets.

[c52] 52. The system of Claim 43, wherein the logic component converts IP packets to OTA protocol packets.

[c53] 53. The system of Claim 49, wherein the logic component converts IP packets to OTA protocol packets.

[c54] 54. The system of Claim 48, wherein the wireless device protocol is a spread spectrum protocol.

[c55] 55. The system of Claim 49, wherein an OTA protocol voice packet has a size less than the size of an IP packet.

[c56] 56. The system of Claim 1, wherein the infrastructure component is part of a communications infrastructure undertaking no vocoding.

[c57] 57. The system of Claim 54, wherein the infrastructure component is part of a communications infrastructure undertaking no devocoding.

[c58] 58. The method of Claim 11, wherein the wireless device is a first wireless device and the first wireless device communicates with a second wireless device in a call, and the method includes not undertaking tandem vocoding in the call.

[c59] 59. The system of Claim 30, wherein the infrastructure communicates information

from one infrastructure endpoint to another infrastructure endpoint in a call between two wireless devices without vocoding or devocoding the information.

[c60]           60.     A communication system, comprising:  
                   at least first and second wireless endpoints in the system;  
                   an infrastructure supporting IP, the infrastructure including a first virtual IP endpoint communicating with the first wireless endpoint, the first virtual IP endpoint receiving information from the first wireless endpoint and sending the information through the infrastructure to the second IP endpoint for transmission therefrom to the second wireless endpoint, wherein no compression or decompression of the information is undertaken by the infrastructure.

[c61]           61.     The system of Claim 58, wherein at least the first virtual IP endpoint accesses at least one logic component undertaking method acts including:  
                   transforming information in IP protocol to wireless device protocol;  
                   sending the information in wireless device protocol to the first wireless endpoint;  
                   transforming information in wireless device protocol from the first wireless endpoint to IP protocol; and  
                   sending the information in IP protocol to the second IP endpoint.

[c62]           62.     The system of Claim 59, wherein the wireless device protocol is a protocol selected from the group of protocols consisting of: CDMA, WCDMA, TDMA, TD-SCDMA, UMTS.

[c63]           63.     The system of Claim 58, wherein the first virtual IP endpoint is a base station (BTS).

[c64]           64.     The system of Claim 59, wherein the wireless device protocol is an over-the-air (OTA) protocol.

[c65]           65.     The system of Claim 59, wherein the logic component converts OTA protocol



010299

packets to IP packets.

[c66]            66.     The system of Claim 59, wherein the logic component converts IP packets to OTA protocol packets.

[c67]            67.     The system of Claim 60, wherein the logic component converts IP packets to OTA protocol packets.

[c68]            68.     The system of Claim 65, wherein the wireless device protocol is a CDMA protocol.

010299